

Title (en)
ACCURATE AND FAST RESPONSE TEMPERATURE MEASUREMENT

Title (de)
GENAUE UND SCHNELL ANSPRECHENDE TEMPERATURMESSUNG

Title (fr)
MESURE DE TEMPÉRATURE PRÉCISE ET À RÉPONSE RAPIDE

Publication
EP 3462152 B1 20230222 (EN)

Application
EP 18198011 A 20181001

Priority
US 201715722772 A 20171002

Abstract (en)
[origin: EP3462152A1] Apparatus and associated methods relate to generating a temperature measurement signal based upon a weighted average of signals generated by a resistive temperature detector (RTD) (18) and a thermocouple device. The thermocouple device includes first and second thermocouple junctions (24A, 24B). The first thermocouple junction (24A) is thermally coupled to the RTD (18), and the second thermocouple junction (24B) is thermally isolated from the RTD (18). The thermocouple is configured to generate a signal indicative of a difference between first and second thermocouple junctions (24A, 24B), which is substantially equal to the difference between the RTD (18) and the second thermocouple junction (24B) due to the thermal coupling configuration. The RTD (18) generates a signal indicative of a temperature of the RTD (18). A weighted sum of the first and second signals is indicative of a temperature of the second thermocouple junction (24B), which responds rapidly to temperature fluctuations, due to its having a relatively small thermal mass compared with the RTD (18).

IPC 8 full level
G01K 7/02 (2006.01); **G01K 7/16** (2006.01)

CPC (source: EP US)
G01K 3/00 (2013.01 - US); **G01K 7/021** (2013.01 - EP US); **G01K 7/14** (2013.01 - US); **G01K 7/16** (2013.01 - EP US); **G01K 7/42** (2013.01 - US)

Cited by
US2022316962A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
EP 3462152 A1 20190403; EP 3462152 B1 20230222; US 10591363 B2 20200317; US 2019101456 A1 20190404

DOCDB simple family (application)
EP 18198011 A 20181001; US 201715722772 A 20171002